

501.33961R00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): FUJII, et al

Serial No.: Reissue of U.S. Patent No. 5,914,763
(issued June 22, 1999)

Filed: June 21, 2001

For: LIQUID CRYSTAL DISPLAY WITH SUBSTANTIALLY EQUAL
RESISTANCES FOR SETS OF TERMINAL ELECTRODES AND
INCLINED WIRING ELECTRODES

Group:

Examiner:

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

June 21, 2001

Sir:

The following amendments and remarks are respectfully
submitted in connection with the above-identified application.

IN THE CLAIMS:

Please amend claims 1 and 10 as follows:

1. (amended) A liquid crystal display suitable for
high-quality display comprising:

a pair of liquid crystal device substrates so arranged as
to be opposite to each other and joined together by a sealant
with a liquid crystal interposed therebetween; and

a plurality of liquid crystal drive elements connected to

wirings on the liquid crystal device substrate and provided to drive the liquid crystal;

wherein the liquid crystal device substrates are provided with:

a plurality of parallel display electrodes;

a plurality of parallel terminal electrodes led out to the end portion of the liquid crystal device substrates, connected to the liquid crystal drive elements, and arranged at pitches smaller than those of the display electrodes parallelly to the display electrodes; and

a plurality of wirings including almost mutually parallel[,] inclined linear wiring electrodes for connecting the display electrodes and the terminal electrodes; and

wherein the lengths of the terminal electrodes and the widths of the inclined linear wiring electrodes are adjusted so that each resistances of each set of the terminal electrodes and [each set of] the inclined linear wiring electrodes are substantially equal.

10. (amended) A liquid crystal display suitable for high-quality display comprising:

a pair of liquid crystal device substrates so arranged as to be opposite to each other and joined together by a sealant with a liquid crystal interposed therebetween; and

a plurality of liquid crystal drive elements connected

to wirings on the liquid crystal device substrates and provided to drive the liquid crystal;

wherein the liquid crystal device substrates are provided with:

a plurality of parallel display electrodes;

a plurality of parallel terminal electrodes led out to the end portion of the liquid crystal device substrates, connected to the liquid crystal drive elements, and arranged at the terminal electrodes pitches smaller than those of the display electrodes parallelly to the display electrodes;

a plurality of wirings including almost mutually parallel[,] inclined linear wiring electrodes for connecting the display electrodes and the terminal electrodes; and

a color filter formed on one of the liquid crystal device substrates from a display area to the end portion of the liquid crystal device substrates; and

wherein the lengths of the terminal electrodes and the widths of the inclined linear wiring electrodes are [so] adjusted so that each resistances of each set of the terminal electrodes and [each set of] the inclined linear wiring electrodes are substantially equal to each other.

REMARKS

By the above amendment, claims 1 and 10 of this reissue application of U.S. Patent No. 5,914,763 have been amended,

with new claims 25-46 being presented in the reissue application.

Applicants note that the references cited in U.S. Patent No. 5,914,763, as shown on the attached copy of the cover sheet of the patent, should be considered herein and apparently two of the citations are incorrect. That is, applicants consider that U.S. Patent No. 4,515,647 to Sasaki et al should be U.S. Patent No. 4,545,647 to Sasaki et al and U.S. Patent No. 5,906,071 to Takahara et al should be U.S. Patent No. 4,906,071.

Examination of this reissue application and favorable action thereof is respectfully requested.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.33961R00) and please credit any excess fees to such deposit account.

Respectfully submitted,



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US005914763A

United States Patent [19]**Fujii et al.**[11] **Patent Number:** **5,914,763**[45] **Date of Patent:** **Jun. 22, 1999**

[54] **LIQUID CRYSTAL DISPLAY WITH
SUBSTANTIALLY EQUAL RESISTANCES
FOR SETS OF TERMINAL ELECTRODES
AND INCLINED WIRING ELECTRODES**

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[21] **Appl. No.:** **09/056,780**

[22] **Filed:** **Apr. 8, 1998**

Related U.S. Application Data

[63] **Continuation of application No. 08/523,842, Sep. 7, 1995,**
Pat. No. 5,757,450.

[30] Foreign Application Priority Data

Sep. 8, 1994 [JP] Japan 6-214785
Sep. 8, 1994 [JP] Japan 6-214825
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[51] **Int. Cl.⁶** **G02F 1/1345; G02F 1/1343**

[52] **U.S. Cl.** **349/149; 349/143; 349/150;**
349/152

[58] **Field of Search** **349/143, 152,**
349/150, 149

[56] References Cited**U.S. PATENT DOCUMENTS**

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[57] ABSTRACT

A liquid crystal display including a plurality of parallel display electrodes wired over an electrode substrate, terminals for the display electrodes led out to the end portion of the electrode substrate and connected to TCPs, the terminals having pitches smaller than those of the display electrodes, and leadout wirings for connecting the display electrodes and the terminals. The leadout wirings each consist of a portion extending from a respective display electrode as it is, a portion extended from the respective terminals as it is, and almost parallel, inclined linear wiring that connects the two extended portions. The length of the two extended portions and the width of the inclined linear wiring are adjusted so that the wiring resistances of the individual leadout wirings are substantially equal.

24 Claims, 27 Drawing Sheets

